

5       What is claimed is:

1.       A method for adjusting keystone in a projector, comprising:
  - (a)     sensing using an imaging device an indication of the height of a projection screen and the width of said projection screen;
  - 10       (b)   determining an aspect ratio for said projection screen;
  - (c)   determining a transformation to adjust the keystone of an image projected from said projector based upon said aspect ratio;
  - (d)   modifying said image projected from said projector in accordance with said transformation;
  - 15       (e)   projecting said modified image from said projector,
2.       The method of claim 1 wherein said imaging device and said projector are maintained in a fixed relationship with respect to each other.
- 20       3.       The method of claim 1 further comprising selecting an aspect ratio for said projection screen from a predetermined set of aspect ratios.
4.       The method of claim 1 wherein said determining said aspect ratio is based upon a plurality of height measurements.
- 25       5.       The method of claim 1 wherein said determining said aspect ratio is based upon a plurality of width measurements.
6.       The method of claim 1 wherein said determining is based upon a plurality of height measurements and a plurality of width measurements.
- 30       7.       The method of claim 3 wherein said set of aspect ratios includes all of 1:1, 4:3, and 16:9.

- 5                    8.        The method of claim 1 wherein said imaging device is integral with said projector.
9.        A method for sensing a projection screen with a projector, comprising:
- 10                    (a)        sensing using an imaging device an indication of the height of a projection screen and the width of said projection screen;
- (b)        determining an aspect ratio for said projection screen;
- (c)        projecting an image from said projector onto said projection screen.
- 15                    10. The method of claim 9 further comprising:
- (a)        determining a transformation to adjust the keystone of said image projected from said projector based upon said aspect ratio;
- (b)        modifying said image projected from said projector in accordance with said transformation.
- 20                    (c)        projecting said modified image from said projection onto said projection screen.
11.        The method of claim 9 wherein said imaging device is integral with said projector.
- 25                    12.        The method of claim 9 wherein said imaging device and said projector are maintained in a fixed relationship with respect to each other.
13.        The method of claim 9 further comprising selecting an aspect ratio for said projection screen from a predetermined set of aspect ratios.
- 30                    14.        The method of claim 9 wherein said determining said aspect ratio is based upon a plurality of height measurements.

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15. The method of claim 9 wherein said determining said aspect ratio is based upon a plurality of width measurements.

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16. The method of claim 9 wherein said determining is based upon a plurality of height measurements and a plurality of width measurements.

17. The method of claim 9 wherein said set of aspect ratios includes all of 1:1, 4:3, and 16:9.

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18. A method for adjusting keystone in a projector, comprising:

- (a) sensing using an imaging device a projection screen;
- (b) decreasing the scale of an image to be projected in accordance with said projection screen;
- (c) determining a transformation to adjust the keystone of an image projected from said projector based upon said projection screen;
- (d) modifying said image projected from said projector in accordance with said transformation;
- (e) projecting said modified image from said projector,

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19. The method of claim 18 further comprising determining an aspect ratio for said projection screen.

20. The method of claim 18 wherein said imaging device and said projector are maintained in a fixed relationship with respect to each other.

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21. The method of claim 19 wherein said determining said aspect ratio is based upon a plurality of height measurements.

- 5           22. The method of claim 19 wherein said determining said aspect ratio is  
              based upon a plurality of width measurements.
23. The method of claim 19 wherein said determining is based upon a  
              plurality of height measurements and a plurality of width measurements.
- 10           24. The method of claim 19 wherein said imaging device is integral with said  
              projector.
25. The method of claim 18 wherein said image to be projected from said  
15           projector prior to said decreasing is fully covers said projection screen.
26. The method of claim 18 wherein said image to be projected from said  
              projector prior to said decreasing only partially covers said projection  
              screen.
- 20           27.     The method of claim 18 wherein said image to be projected from said  
              projector prior to said decreasing extends beyond the boundary of a  
              portion of said projection screen and does not project on a portion of said  
              projection screen.
- 25           28. A method for sensing a projection screen with a projector, comprising:
- (a)     sensing using an imaging device a projection screen;
- (b)     sensing the boundary color of said projection screen;
- (c)     modifying said image based upon said boundary color;
- 30           (c)     projecting said modified image from said projector onto said  
              projection screen.
29. The method of claim 28 further comprising:

- 5                   (a)     determining a transformation to adjust the keystoneing of said  
                      image projected from said projector based upon said aspect ratio;  
                      (b)     modifying said image projected from said projector in accordance  
                              with said transformation.  
10                   (c)     projecting said modified image from said projection onto said  
                              projection screen.

30. The method of claim 28 wherein said boundary color is categorized as  
      either relatively dark or relatively light.

15                   31. The method of claim 30 wherein if said boundary color is relatively dark  
                      said modified image is permitted to extend onto said boundary color.

32. The method of claim 30 wherein if said boundary color is relatively light  
      said modified image is not permitted to extend onto said boundary color.

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